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09/897,317	07/02/2001	Marc Seghatol	155036US02	1736

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EXAMINER

LEWIS, RALPH A

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3732

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

Paper No. 16

Application Number: 09/897,317  
Filing Date: July 02, 2001  
Appellant(s): SEGHATOL, MARC

\_\_\_\_\_  
Brad Pedersen  
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed August 14, 2003.

**(1) *Real Party in Interest***

A statement identifying the real party in interest is contained in the brief.

**(2) *Related Appeals and Interferences***

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

**(3) *Status of Claims***

The statement of the status of the claims contained in the brief is correct.

**(4) *Status of Amendments After Final***

The appellant's statement of the status of amendments after final rejection contained in the brief is correct. No amendment after final has been filed.

**(5) *Summary of Invention***

The summary of invention contained in the brief is correct.

**(6) *Issues***

The appellant's statement of the issues in the brief is correct.

**(7) *Grouping of Claims***

Appellant's brief includes a statement that claims 2-5 and 14 do not stand or fall together and provides reasons as set forth in 37 CFR 1.192(c)(7) and (c)(8).

**(8) *Claims Appealed***

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(9) *Prior Art of Record***

The following is a listing of the prior art of record relied upon in the rejection of claims under appeal.

US 5,421,727	Stevens et al	6-1995
US 6,254,389 B1	Seghatol	7-2001

**(10) *Grounds of Rejection***

The following ground(s) of rejection are applicable to the appealed claims:

**Obvious-type Double Patenting Rejection**

Claims 1-6, 13, 14 and 16 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-14 of U.S. Patent No. 6,254,389 B1.

Applicant has not contested this Obvious-type double Patenting Rejection based on applicant's earlier patent. Applicant has further indicated that a terminal disclaimer would be filed upon a determination that the claims rejected under prior art be declared otherwise allowable. Accordingly, since there is no dispute as to this rejection it has not been further discussed. A further explanation of this rejection can be found in the Final Office Action of 26 February 2003 (paper no. 11)

### **35 U.S.C. 102(b) Rejection**

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Stevens et al (US 5,421,727).

Stevens et al disclose a microwave dental system (Figure 5) with a hand held tool 410, antenna 422, wave guide 24 (connected at 440) and source of microwave energy 50 having a control system (column 3, line 51- column 4, line 4).

Stevens et al only disclose the application of the tool antenna to the interior of a patient's tooth through the root canal whereas applicant's apparatus claims call for the device to be used "adjacent at least one exterior surface." The examiner is of the position that the Stevens et al positioning of the antenna 422 in a root canal meets the "adjacent" limitation since a root canal is "adjacent" the tooth's exterior. Moreover, the examiner has made the factual finding that the Stevens et al antenna 422 is capable of being positioned adjacent an exterior surface of a patient's tooth. The manner in which applicant intends for the claimed device to be used fails to impose any objectively ascertainable structural distinctions from the device disclosed by Stevens et al. The factual finding that the Stevens et al antenna 422 is capable of being positioned adjacent an outer surface of a tooth is based on the Stevens et al disclosure regarding the size and shape of the antenna and its intended use on the teeth of a patient.

In regard to the "microwave energy is applied at a frequency and power to preferentially heat caries" limitation, the examiner has made the factual finding that the Stevens et al device is inherently capable of operating at such a frequency and power.

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Attention is directed to column 3, lines 64 - column 4, line 4 where Stevens et al state "[t]he amount of power may be selected to slightly warm the region to enhance the efficacy of a disinfectant liquid, or to kill tissue or coagulate it in a cohesive mass, or to cause a glazing of tooth structure aimed at decreasing its permeability to fluids or microorganisms or to melt sealing material evenly in the root canal." Microwave energy heats matter by vibrating the matter's molecules. Stevens et al indicates that the power level and the frequency with which it is delivered may be varied from a relatively low value where it slightly warms the surrounding region to much higher levels where it kills tissue and glazes tooth structure. "Caries" as defined by applicant is "demineralized and softened and moist tooth enamel or dentin, and contains micro-organisms" (applicant's specification, page 5, lines 4+). Stevens et al further indicate that the device is to be constructed to supply microwave energy at a value capable of raising the "temperature of the surrounding tooth material" (column 1, lines 57, 58). The examiner has made the factual finding that since the Stevens et al tool is capable of delivering microwaves at a power and frequency level that is capable of warming surrounding tissue regions, killing tissues, raising the temperature of surrounding tooth material and glazing tooth structure, then it absolutely must be capable of "heating caries." Decayed tooth structure (caries) and micro-organisms are composed of molecules which vibrate when exposed to microwave energy. The Stevens et al device which vibrates molecules causing warming of surrounding tissue regions, killing of tissues, raising surrounding tooth temperature would also cause decaying tooth structure and micro-organisms (tissue) to increase in temperature because the molecules of these closely

related tissues would also vibrate. This factual finding is not that the Stevens et al device is probably capable of heating caries or might be able to heat carries, but that it is absolutely capable of heating caries. Applicant has provided no evidence to dispute this finding.

### **35 U.S.C. 103 Rejection**

Claims 2-5 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stevens et al (5,421,727).

Stevens et al fail to set forth any explicit operating values for the patented microwave dental instrument. The ordinarily skilled artisan in constructing, making and using the Stevens et al device would have to determine these values. Stevens et al suggests that the device be constructed to supply microwave energy at a value capable of raising the "temperature of the surrounding tooth material" (column 1, lines 57, 58), that "[t]he amount of power may be selected to slightly warm the region to enhance the efficacy of a disinfectant liquid, or to kill tissue or coagulate it in a cohesive mass, or to cause a glazing of tooth structure aimed at decreasing its permeability to fluids or microorganisms or to melt sealing material evenly in the root canal" (column 3, lines 64 - column 4, line 4) . To have constructed the Stevens et al device so that it is capable of the described variety of uses, one of ordinary skill in the art would have found it obvious to have selected operating parameters within the ranges claimed so that it could have performed the variety of desired functions disclosed by Stevens.

Moreover, applicant has failed to provide any evidence that the specifically claimed range of values is critical to the construction or intended operation of the claimed device. More particularly, there is no showing that somehow the claimed ranges have a particular heating effect on carries and not other very similar mouth tissues, but rather applicant's own disclosure indicates that the device is capable of curing (i.e. heating) polymer materials and composites (specification, page 1, "field of the invention"). Remarkably, page 4, lines 26+ of applicant's specification sets forth the claimed ranges of values, not with respect to heating caries, but with respect to curing dental composites. There is nothing remarkable or unobvious about the claimed range of values, they are simply values well within a range that one of ordinary skill in the art would have found to be obvious in constructing the disclosed Stevens et al device.

**(11) Response to Argument**

In response to the 35 U.S.C. 102 rejection applicant doesn't point to any distinct structural characteristics that would distinguish the claimed invention from that of Stevens et al, but merely argues that applicant intends for his device to be used differently (positioned exterior of the tooth, rather than interiorly and for heating caries, rather than heating tooth tissue, heating surrounding tissue, killing tissue, and melting sealing material as disclosed by Stevens et al). As set forth in the rejection above, the Stevens et al device is capable of such intended uses. It is well settled that a prior art device does not become patentable when a new or different use is discovered for the prior art device.

Applicant further argues that the Stevens et al device of Figures 2 and 3a would be inoperative if used exterior to a tooth. The rejection is based on the Stevens et al Figure 5 antenna that includes both conductors 410 and 428, rather than a spaced separate conductor as in Figures 2 and 3a.

In response to the 35 U.S.C. 103 rejection, applicant argues that there is no motivation to construct the Stevens et al device to operate within the range of parameters claimed. The examiner disagrees, the ordinarily skilled artisan would be motivated to construct the Stevens et al device to operate under a variety of different power and frequency levels so as to accomplish the disclosed different uses of heating tooth tissue, heating surrounding tissues, killing tissues, melting sealing materials and glazing of tooth structures. The specific ranges of values claimed would have all fallen well within a range the ordinarily skilled artisan would have found obvious in constructing the Stevens et al device so that it would perform as described.

Applicant points to the "complex calculations and research required to establish the operating parameters" at page 6 of the specification. It is noted, however, that much of the discussion regarding the disclosed formula is in reference to the "curable dielectric resinous material" and that **the particularly claimed values (specified on page 4, lines 27-33 of applicant's specification) are determined "depending upon the desired curing time and the particular composition of the resin matrix to be cured."** There appears to be no special determination that the explicitly claimed values are tailored or critical to heating caries, but are rather just general operating parameters for accomplishing microwave heating in general.

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For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

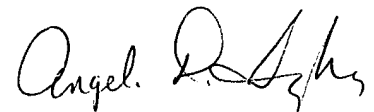


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